

REMARKS

The purpose of this Preliminary Amendment is to clarify the translation, amend claims, and to add new claims to provide Applicant with a scope of protection commensurate with its contribution to the art.

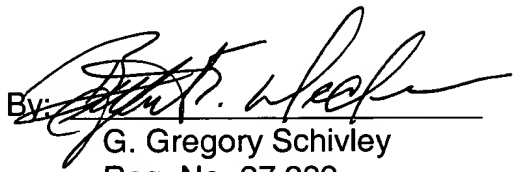
Favorable consideration of this application is respectfully requested.

Respectfully submitted,

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Harness, Dickey & Pierce, P.L.C.
P.O. Box 828
Bloomfield Hills, MI 48303
(248)641-1600

GGG/BEW/jah

By: 

G. Gregory Schivley
Reg. No. 27,382
Bryant E. Wade
Reg. No. 40,344

ATTACHMENT FOR SPECIFICATION AMENDMENTS

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicates insertions and brackets indicate deletions.

[0006] The present invention [focus] focuses on the problems of the conventional art described above, and it is an object of the present invention to provide a method and an apparatus for examining foreign matters in through holes, which can quickly make determinations with low costs and high accuracy.

[0007] To achieve the object described above, a method for examining foreign matters in through holes in accordance with an embodiment of the present invention comprises simultaneously taking light passing through a plurality of through holes having a uniform size as image data, initially counting the number of light receiving regions, each being treated as a mass, corresponding to the imaged respective through holes, and conducting a process to determine presence or absence of foreign matters by mutually comparing areas of adjacent ones of the light receiving regions for only a work piece with a light receiving region count value being concurred with a specified value. In this case, the counting of light receiving regions may be conducted only for those of the extracted light receiving regions whose area values are within a specified range. Also, when the number of light receiving regions counted in the step of counting the number of light receiving [region] regions does not concur with a specified value, the examination may be ended.

[0009] More concretely, light passing through a plurality of through holes having a uniform size is simultaneously taken as image data, the number of light receiving regions corresponding to the imaged respective through holes is initially counted, and a process to determine presence or absence of foreign matters is performed by mutually comparing areas of adjacent ones of the light receiving regions for only a work piece with a light receiving region count value being concurred with a specified value, and when the number of light receiving regions counted in the step of counting the number of light receiving [region] regions does not concur with a specified value, the examination is ended.

ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

1. (Amended) A method for examining foreign matters in through holes characterized in that light passing through [the] a plurality of through holes having a uniform size is simultaneously taken as image data, a number of light receiving regions corresponding to the imaged respective through holes, each being treated as a mass, is initially counted, and a process to determine presence or absence of foreign matters is conducted by mutually comparing areas of adjacent ones of the light receiving regions for only a work piece with a counted value of light receiving [region] regions being concurred with a specified value.

3. (Amended) A method for examining foreign matters in through holes according to claim 1, wherein, when the number of light receiving regions counted in the step of counting the number of light receiving [region] regions does not concur with a specified value, the examination is ended.

4. (Amended) A method for examining foreign matters in through holes characterized in that light passing through a plurality of through holes having a uniform size is simultaneously taken as image data, [the] a number of light receiving regions corresponding to the imaged respective through holes is initially counted subject to the extracted light receiving regions having area values being within a specified range, a

process to determine presence or absence of foreign matters is performed by mutually comparing adjacent ones of the light receiving regions for only a work piece with a light receiving region count value being concurred with a specified value, and the examination is ended when the number of the light receiving regions counted in the step of counting the number of light receiving region does not concur with a specified value.

6. (Amended) A method for examining foreign matters in through holes according to [any one of] claim 1 [through 5], wherein an image is taken with an imaging focal point of [the] a sensor camera being shifted from a surface of the work piece, such that the image is taken with an image area of [the] light passing through the through hole being expanded.